Space 2.0 Pre-Summit Briefing:

EARTH PIXELS

*Extracting Actionable Insight
from the Geospatial Data Tsunami*

Tuesday, April 26, 2016

7:00-8:00   Registration and Continental Breakfast

8:00-8:15   Opening Remarks by Briefing Chair

Sean Casey, *Co-Founder and Managing Director,* SILICON VALLEY SPACE CENTER

8:15-8:45   *Keynote Address:* **Earth Observation in the Cloud - Lessons from Landsat on AWS**
In March 2015, Amazon Web Services launched Landsat on AWS, which made makes Landsat 8 data freely available for anyone to use on Amazon S3. Within the first 150 days of the launch of Landsat on AWS, the data was requested over 500 million times, and it has led to new product development by enterprises and startups including Mapbox, Esri, Development Seed, Trimble, Astro Digital, and Blue Raster. This session will present findings from this initiative and a discussion about how Earth observation research can advance without limitations of bandwidth, storage, memory, or processing power. It will also include explanation of how Landsat data has been optimized for analysis in the cloud and analysis of the economic considerations that arise from sharing large data sets at web scale.

Jed Sundwall, *Global Lead, Open Data,* AMAZON WEB SERVICES

8:45-9:15   *Presentation:* **Market Outlook for Geospatial**
*   Proliferation of satellite constellations

	* Impact of big data analytics tools/AI/neural nets
	* Where will future users come from? What challenges do they have? What are they looking for? How much will they pay, for what kind of knowledge product?
	* How are incumbent players adapting?
	* Who are the new entrants changing the business model(s)?

Mark Bünger, *Vice President of Research,* LUX RESEARCH

9:15-9:45   Networking Break

9:45-11:00   *Panel Discussion:* **Taking Geospatial to the Next Level**
The population of the Earth will probably grow to 9 Billion by 2050 – what does that mean for the availability of food, fresh water, clean air, energy and "ecosystem services?" How are ecosystems responding to these impacts, and the broader trend of a warming climate and all its many manifestations? Clearly geospatial data can help monitor these diverse processes—at increasing levels of resolution and frequency. As the saying goes, you can't manage what you can't measure. This panel will take the maximum broad angle view on the explosion of satellite sensing capabilities, startup and government-driven projects, and what kinds of use cases and business models can be built and tested.

Moderator:
Ellen Chang, *Managing Partner,* LIGHTSPEED INNOVATIONS

Panelists:
Stewart Bain, *President and Chief Executive Officer*, NORSTAR SPACE DATA INC.
Erik J. Grant, *Technical Director,* RAYTHEON
Shay Har-Noy, *Vice President and General Manager, Platform,* DIGITALGLOBE
Dan Lopez, *Vice President Platform and Analytics,* URTHECAST
Jeff Stein, *Vice President of Business Development,* ORBITAL INSIGHT
Rainer Sternfeld, *Chief Executive Officer,* PLANET OS

11:00-12:15   *Panel Discussion:* **Predicting Market Behavior from Geospatial Data**
* Data integrated with demographics or financial datasets
* Using geospatial data integrated with mobile GIS data to predict market behavior
* What are the most promising applications?
* What is needed in terms of data sources to deliver what the market needs?
* What needs to change in terms of service delivery, and in the value chain, to deliver what is required?

Moderator:
Sam Adlen, *Head of Business Innovation,* SATELLITE APPLICATIONS CATAPULT

Panelists:
Gary Angel, *Principal, Advisory Digital Analytics Center of Excellence,* ERNST & YOUNG LLP
Richard Chmiel, *Chief Executive Officer,* RS METRICS
Michael Ferrari, Ph.D., *Head of Data Science,* THE WEATHER COMPANY, AN IBM BUSINESS
David Fox, *Founder and Managing Director,* GEOSPATIAL INSIGHT
Bobby Shackelton, *Head of Maps,* BLOOMBERG LP
Steven M. Ward, *Director of Geospatial Sciences,* THE CLIMATE CORPORATION

12:15-1:30   Group Luncheon

1:30-2:00   *Keynote Address:* **Earth Engine - Google's Cloud Platform for Global-Scale Earth Analytics**
The volume of satellite imagery and other Earth data is growing rapidly, as is the urgent demand for information that can be derived from such data to inform decisions in a range of areas including global food and water security, disaster risk management, public health, biodiversity, and climate change adaptation. Key trends in computing must influence the design of infrastructure to meet those global data analysis challenges in the decade to come. This talk will describe the trends and technologies that have informed Google's development of the Earth Engine cloud computing platform over the past six years, as well as our experiences applying that platform to computational problems related to a number of global challenges as we work towards a vision of a living, breathing dashboard of the planet.

Matt Hancher, *Senior Software Engineer, Earth Engine,* GOOGLE

2:00-3:00   *Panel Discussion:* **Impact of New Technologies on What Kinds of Actionable Data Can Be Extracted from Geospatial/Earth Observation**

Moderator:
Jeff Matthews, *Director of Venture Strategy and Research,* SPACE FRONTIER FOUNDATION

Panelists:
Joseph D. Fargnoli, *Chief Executive Officer,* RITRE CORPORATION
Talbot Jaeger, *Chief Technologist,* NOVAWURKS, INC.
Gareth Morgan, Ph.D., *Chief Executive Officer,* TERRABOTICS
Perry R. Peterson, *President and Chief Executive Officer,* THE PYXIS INNOVATION
Thomas P. Yunck, *Chief Technical Officer,* GEOOPTICS INC.

3:00-3:30   Networking Break

3:30-4:00   *Case Study A:* **Counting Calories - Monitoring the World's Food Source**
Agriculture as recently become the darling of commercial remote sensing.

Lots of people are out there trying to solve the world's food problems from space. So, what has changed with the technology, products, business models which has made the agriculture industry an attractive customer for satellite companies? And is the agriculture industry ready to adopt the sensor based technology into traditional, hands on farming practices?

Bronwyn Agrios, *Head of Products,* ASTRO DIGITAL

4:00-4:30 *Case Study B:* **Weather/Climate/Risk**

Chris McCormick, *Founder and Chief Executive Officer,* PLANETIQ

4:30-5:00 *Case Study C:* **Oil and Gas Exploration/Infrastructure**

Gareth Morgan, Ph.D., *Chief Executive Officer,* TERRABOTICS

5:00-5:30 *Presentation:* **Bring it All Down to Earth - How Digital Earth Will Allow Every Decision-Maker to Participate in Earth Observations**
Case studies using PYXIS Globe technology and the Discrete Global Grid System will showcase how decision-makers can quickly answer questions.
1. *Global:* A drought has hit a large area of the Amazonian rainforest. It's the third drought in the last 10 years. NASA scientists want to determine its effect on the planet.
2. *Regional:* Authorities are interested in profitably exploiting radiation from the sun working in conjunction with regional authorities to provide cadastral property plans and the location of transportation and electrical transmission routes.
3. *National:* There is an unusual storm front forming over the mountains. A river flows through a city not far from the mountain streams that enter the river. People need to get an answer fast as to what will be happening in this location.
4. *Local:* Investors looking to relocate to different cities need to know where is the ideal place for my business and what services are within these areas that meet my needs.
5. *Educational:* Teachers are looking for a technologically engaging platform that will empower students to gain better insight into geospatial understanding through search, combine, analyze and sharing Earth's information on demand.

Perry R. Peterson, *President and Chief Executive Officer,* THE PYXIS INNOVATION

5:30 Pre-Summit Briefing Adjourns

5:30-6:30 Networking Reception